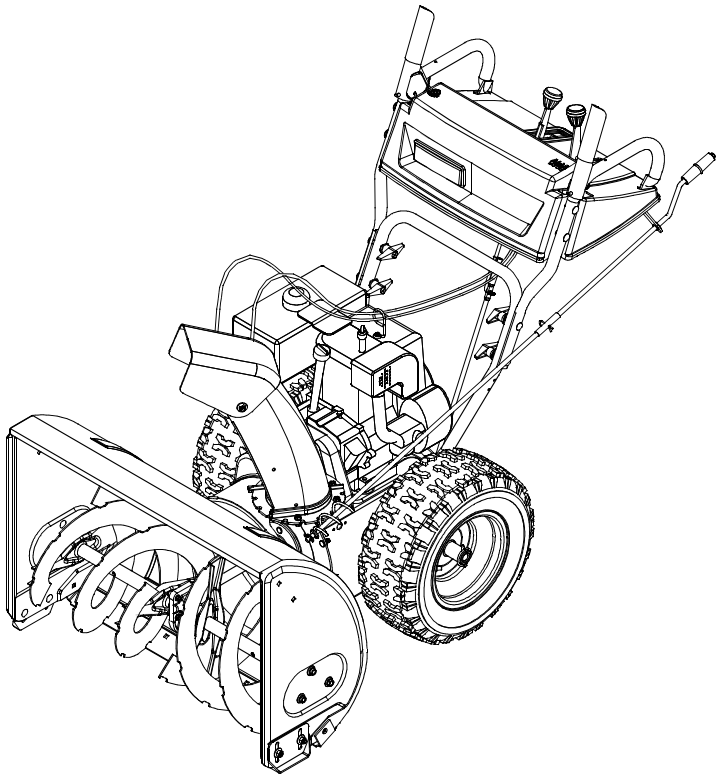
YARD-MAN by MTD

Operator's Manual



Snow Thrower

Models
31AE633E401
31AE663H401

IMPORTANT: Read safety rules and instructions carefully before operating equipment.

Warning: This unit is equipped with an internal combustion engine and should not be used on or near any unimproved forest-covered, brush-covered or grass-covered land unless the engine's exhaust system is equipped with a spark arrester meeting applicable local or state laws (if any). If a spark arrester is used, it should be maintained in effective working order by the operator. In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands. A spark arrester for the muffler is available through your nearest engine authorized service dealer or contact the service department, P.O. Box 368022 Cleveland, Ohio 44136-9722.

MTD PRODUCTS INC. P.O. BOX 368022 CLEVELAND, OHIO 44136-9722

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FINDING MODEL NUMBER

This Operator's Manual is an important part of your new Snow Thrower. It will help you assemble, prepare and maintain the unit for best performance. Please read and understand what it says.

Before you start assembling your new equipment, please locate the model plate on the equipment and copy the information from it in the space provided below. The information on the model plate is very important if you need help from our Customer Support Department or an authorized dealer.

- You can locate the model number by looking at the lower frame cover in the rear of your snow thrower. A sample model plate is explained below. For future reference, please copy the model number and the serial number of the equipment in the space below.

(Model Number) (Serial Number)

MTD For A Growing World.

MTD PRODUCTS INC
CLEVELAND, OHIO 44136

Copy the model number here: _____

Copy the serial number here: _____

CALLING CUSTOMER SUPPORT

If you have difficulty assembling this product or have any questions regarding the controls, operation or maintenance of this unit, please call the Customer Support Department.

Call **1- (330) 220-4MTD** (4683) or **1- (800)-800-7310** to reach a Customer Support representative. Please have your unit's model number and serial number ready when you call. See previous section to locate this information. You will be asked to enter the serial number in order to process your call .

SECTION 1: IMPORTANT SAFE OPERATION PRACTICES

This symbol points out important safety instructions which, if not followed, could endanger the personal safety and/or property of yourself and others. Read and follow all instructions in this manual before attempting to operate this machine. Failure to comply with these instructions may result in personal injury. When you see this symbol—**heed its warning**.

WARNING: Engine Exhaust, some of its constituents, and certain vehicle components contain or emit chemicals known to State of California to cause cancer and birth defects or other reproductive harm.

DANGER: This machine was built to be operated according to the rules for safe operation in this manual. As with any type of power equipment, carelessness or error on the part of the operator can result in serious injury. This machine is capable of amputating hands and feet and throwing objects. Failure to observe the following safety instructions could result in serious injury or death.

Training

1. Read, understand, and follow all instructions on the machine and in the manual(s) before attempting to assemble and operate. Keep this manual in a safe place for future and regular reference and for ordering replacement parts.
2. Be familiar with all controls and their proper operation. Know how to stop the machine and disengage them quickly.
3. Never allow children under 14 years old to operate this machine. Children 14 years old and over should read and understand the operation instructions and safety rules in this manual and should be trained and supervised by a parent.
4. Never allow adults to operate this machine without proper instruction.
5. Thrown objects can cause serious personal injury. Plan your snow throwing pattern to avoid discharge of material toward roads, bystanders and the like.
6. Keep bystanders, helpers, pets and children at least 75 feet from the machine while it is in operation. Stop machine if anyone enters the area.
7. Exercise caution to avoid slipping or falling, especially when operating in reverse.

Preparation

1. Thoroughly inspect the area where the equipment is to be used. Remove all door mats, newspapers, sleds, boards, wires and other foreign objects which could be tripped over or thrown by the auger/impeller.
2. Always wear safety glasses or eye shields during operation and while performing an adjustment or repair to protect your eyes. Thrown objects which ricochet can cause serious injury to the eyes.
3. Do not operate without wearing adequate winter outer garments. Do not wear jewelry, long scarves or other loose clothing which could become entangled in moving parts. Wear footwear which will improve footing on slippery surfaces.
4. Use a grounded three wire extension cord and receptacle for all units with electric start engines.
5. Adjust collector housing height to clear gravel or crushed rock surfaces.
6. Disengage all clutch levers before starting the engine.
7. Never attempt to make any adjustments while engine is running, except where specifically recommended in the operator's manual.
8. Let engine and machine adjust to outdoor temperature before starting to clear snow.
9. To avoid personal injury or property damage use extreme care in handling gasoline. Gasoline is extremely flammable and the vapors are explosive. Serious personal injury can occur when gasoline is spilled on yourself or your clothes which can ignite. Wash your skin and change clothes immediately.
    a. Use only an approved gasoline container.
    b. Extinguish all cigarettes, cigars, pipes and other sources of ignition.
    c. Never fuel machine indoors.
    d. Never remove gas cap or add fuel while the engine is hot or running.
    e. Allow engine to cool at least two minutes before refueling.
    f. Never over fill fuel tank. Fill tank to no more than ½ inch below bottom of filler neck to provide space for fuel expansion.
    g. Replace gasoline cap and tighten securely.
    h. If gasoline is spilled, wipe it off the engine and equipment. Move machine to another area. Wait 5 minutes before starting the engine.
    i. Never store the machine or fuel container inside where there is an open flame, spark or pilot light (e.g. furnace, water heater, space heater, clothes dryer etc.).
    j. Allow machine to cool at least 5 minutes before storing.

Operation

1. Do not put hands or feet near rotating parts, in the auger/impeller housing or discharge chute. Contact with the rotating parts can amputate hands and feet.
2. The auger/impeller clutch lever is a safety device. Never bypass its operation. Doing so, makes the machine unsafe and may cause personal injury.
3. The clutch levers must operate easily in both directions and automatically return to the disengaged position when released.
4. Never operate with a missing or damaged discharge

chute. Keep all safety devices in place and working.

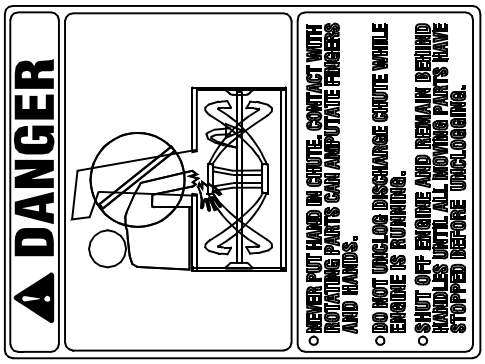
5. Never run an engine indoors or in a poorly ventilated area. Engine exhaust contains carbon monoxide, an odorless and deadly gas.
6. Do not operate machine while under the influence of alcohol or drugs.
7. Muffler and engine become hot and can cause a burn. Do not touch.
8. Exercise extreme caution when operating on or crossing gravel surfaces. Stay alert for hidden hazards or traffic.
9. Exercise caution when changing direction and while operating on slopes.
10. Plan your snow throwing pattern to avoid discharge towards windows, walls, cars etc. To avoid property damage or personal injury caused by a ricochet.
11. Never direct discharge at children, bystanders and pets or allow anyone in front of the machine.
12. Do not overload machine capacity by attempting to clear snow at too fast of a rate.
13. Never operate this machine without good visibility or light. Always be sure of your footing and keep a firm hold on the handles. Walk, never run.
14. Disengage power to the auger/impeller when transporting or not in use.
15. Never operate machine at high transport speeds on slippery surfaces. Look down and behind and use care when in reverse.
16. If the machine should start to vibrate abnormally, stop the engine, disconnect the spark plug and ground it against the engine. Inspect thoroughly for damage. Repair any damage before starting and operating.
17. Disengage all clutch levers and stop engine before you leave the operating position (behind the handles). Wait until the auger/impeller comes to a complete stop before unclogging the discharge chute, making any adjustments, or inspections.
18. Never put your hand in the discharge or collector openings. Always use a clearing tool to unclog the discharge opening.
19. Use only attachments and accessories approved by the manufacturer (e.g. wheel weights, tire chains, cabs etc.).
20. If situations occur which are not covered in this manual, use care and good judgment. Contact your dealer or telephone 1-800-800-7310 for assistance and the name of your nearest servicing dealer.

Maintenance And Storage

1. Never tamper with safety devices. Check their proper operation regularly.
2. Disengage all clutch levers and stop engine. Wait until the auger/impeller come to a complete stop. Disconnect the spark plug wire and ground against the engine to prevent unintended starting before cleaning, repairing, or inspecting.
3. Check bolts, and screws for proper tightness at frequent intervals to keep the machine in safe working condition. Also, visually inspect machine for any damage.
4. Do not change the engine governor setting or over-speed the engine. The governor controls the maximum safe operating speed of the engine.
5. Snow thrower shave plates and skid shoes are subject to wear and damage. For your safety protection, frequently check all components and replace with original equipment manufacturer's (O.E.M.) parts only. "Use of parts which do not meet the original equipment specifications may lead to improper performance and compromise safety!"
6. Check clutch controls periodically to verify they engage and disengage properly and adjust, if necessary. Refer to the adjustment section in this operator's manual for instructions.
7. Maintain or replace safety and instruction labels, as necessary.
8. Observe proper disposal laws and regulations for gas, oil, etc. to protect the environment.
9. Prior to storing, run machine a few minutes to clear snow from machine and prevent freeze up of auger/impeller.
10. Never store the machine or fuel container inside where there is an open flame, spark or pilot light such as a water heater, furnace ,clothes dryer etc.
11. Always refer to the operator's manual for proper instructions on off-season storage.

Your Responsibility:

Restrict the use of this power machine to persons who read, understand and follow the warnings and instructions in this manual and on the machine. The safety labels are given below for your reference.


DANGER
NEVER PUT HAND IN CHUTE. CONTACT WITH ROTATING PARTS CAN AMPUTATE FINGERS AND HANDS.
DO NOT UNCLOG DISCHARGE CHUTE WHILE ENGINE IS RUNNING.
SHUT OFF ENGINE AND REMAIN BEHIND HANDLES UNTIL ALL MOVING PARTS HAVE STOPPED BEFORE UNCLOGGING.

AVOID INJURY FROM ROTATING AUGER - KEEP HANDS, FEET AND CLOTHING AWAY.
DANGER
DANGER
1. KEEP AWAY FROM ROTATING IMPELLER AND AUGER. CONTACT WITH IMPELLER OR AUGER CAN AMPUTATE HANDS AND FEET.
2. DISENGAGE CLUTCH LEVERS, STOP ENGINE, AND REMAIN BEHIND HANDLES UNTIL ALL MOVING PARTS HAVE STOPPED BEFORE UNCLOGGING OR SERVICING MACHINE.
3. TO AVOID THROWN OBJECTS INJURIES, NEVER DIRECT DISCHARGE AT BYSTANDERS. USE EXTRA CAUTION WHEN OPERATING ON GRAVEL SURFACES.
4. READ OPERATOR'S MANUAL.

SECTION 2: ASSEMBLING YOUR SNOW THROWER

Unpacking

- Remove screws from the top sides and ends of the shipping crate.
- Set panel aside to avoid tire punctures or personal injury.
- Remove and discard plastic bag that covers unit.
- Roll unit out of crate.
- Check crate thoroughly for loose parts before discarding.

Loose Parts

- The snow thrower is shipped with following loose parts in the carton. See Figure 1 for illustration, description of item and part number. Please remove all loose parts from the carton before discarding it.

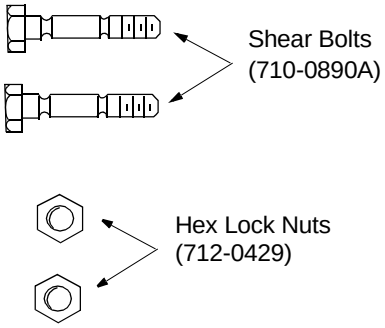


Figure 1

- Please note that these are replacement hardware and not meant for initial assembly of the equipment. If the snow thrower hits a foreign object or ice jam, the bolts, securing the auger shaft, may shear. Use these two shear bolts and nuts as replacement then. Store these in a safe place until needed.

IMPORTANT: NEVER replace the auger shear bolts with standard hex bolts. Any damage to the auger gearbox or other components from standard hex bolts will not be covered by your snow thrower's warranty.

Assembling Handle

NOTE: *Reference to the left or right side of the snow thrower in this manual is observed from the operator's position.*

IMPORTANT: Make any final adjustments as instructed later on in this section before operating your snow thrower. Failure to follow the instructions may cause damage to the snowthrower.

- Remove the **lower** plastic wing nut, cupped washer and carriage bolt from each side of the lower handle. See Figure 2.

NOTE: *On model 633E, remove the lower wing nut and hardware from the right side of the handle only. The wing nut for the left side is in place on the chute directional control.*

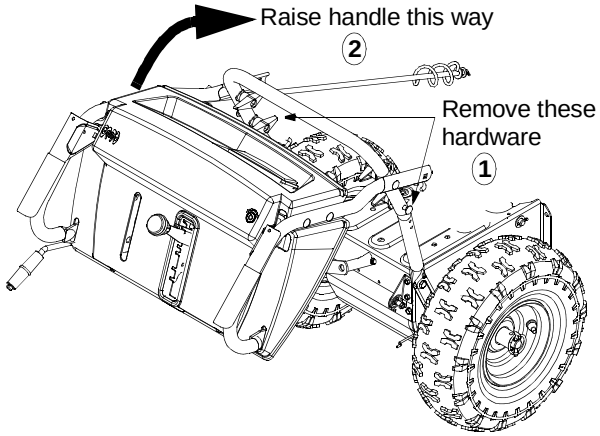


Figure 2

- One end of the chute directional control may be attached to the lower handle with cable ties for shipping purposes. If so, cut the cable ties and free the loose end of the chute directional control.
- Raise the upper handle assembly in the direction shown in Figure 2. Make sure that the upper handle locks into position over the lower handle.

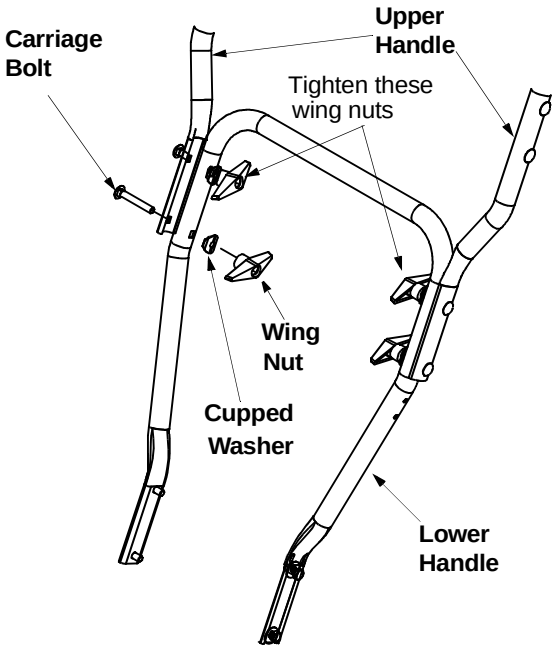


Figure 3

- Look at lower rear of snow thrower frame to be sure all cables are aligned with cable roller guides.

- Secure the upper handle and lower handle with the two plastic wing nuts, cupped washers and carriage bolts previously removed. Attach these hardware on the lower hole in the handles. See Figure 3.

NOTE: *On model 633E, attach the wing nut, cupped washer and carriage bolt in the lower hole on the right side only. The hardware in the left lower hole will be attached later.*

- Tighten the two wing nuts already in place on the upper holes and secure the handles firmly. See Figure 3.
- Slide the shift rod connector down over the end of the lower shift rod. See Figure 4. Tap the connector until it **locks** on the lower shift rod.

NOTE: *If the connector is not properly assembled, the shift rod will pivot and you will not be able to change direction or speed of the snow thrower.*

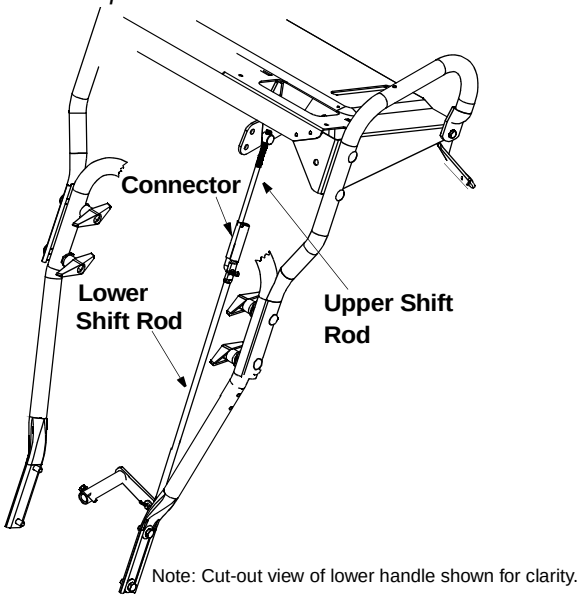


Figure 4

- If not already attached, slip the cables that run from the handle panel to the chute into the cable guide located on top of the engine. See Figure 5.

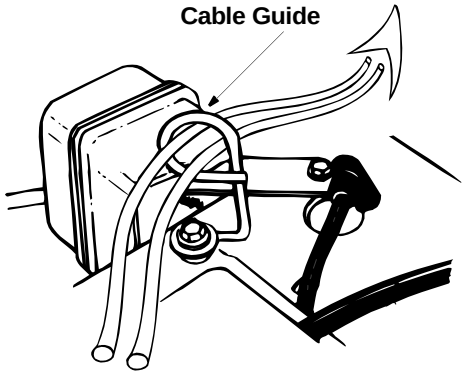


Figure 5

- Unwrap the headlight wire which is attached to the headlight beneath the handle panel. Wind the headlight wire around the right side of the lower handle until excess slack is removed. See Figure 6.
- Plug the wire from the headlight into the alternator lead coming from the right side of the engine, underneath the fuel tank. See Figure 6 inset.

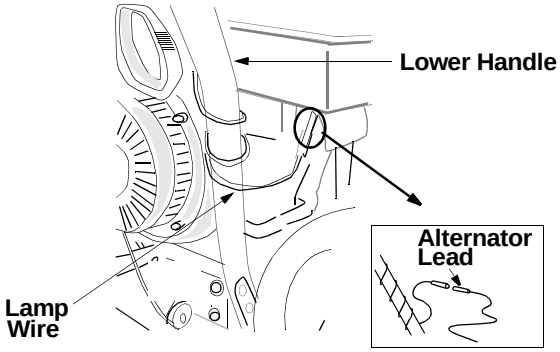


Figure 6

Attaching Chute Directional Control

Model E633E

- Remove the wing nut and cupped washer from the eyebolt on the chute directional control. Leave the hex nut in place on the eyebolt (the nut must be threaded at least halfway onto the eyebolt).
- Insert the eyebolt through the lower hole on the left side of handle. Secure with cupped washer (cupped side against the handle panel) and wing nut. See Figure 7. Do not tighten at this time.

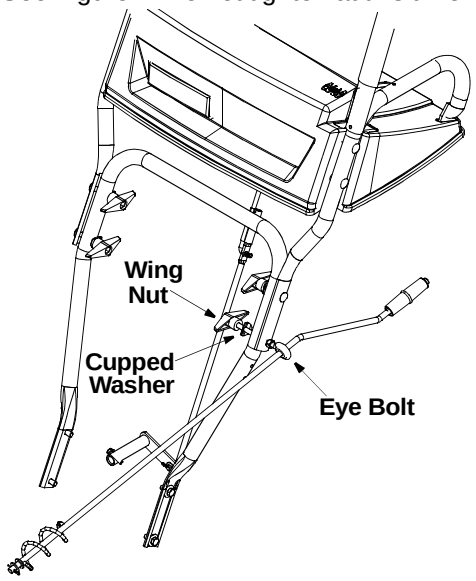


Figure 7

- Adjust the chute directional control support bracket so that the spiral on the chute directional control fully engages the teeth on the chute assembly.
- Tighten wing nut with eye bolt to secure chute directional control.

If the spiral on the chute directional control cannnot be adjusted properly, follow the steps below:

- Loosen the two hex nuts which secure the chute directional control support bracket (see Figure 8) to the snow thrower housing, beside the discharge chute.

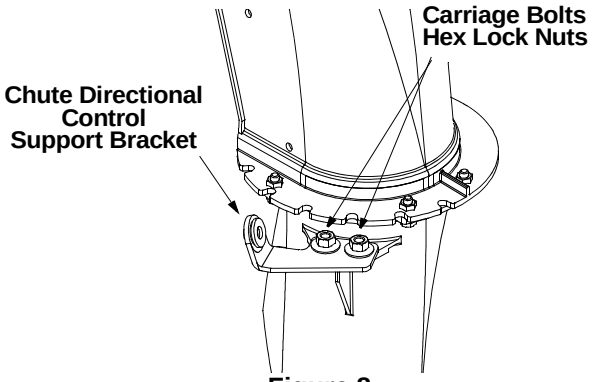


Figure 8

- Remove the hairpin clip and one flat washer from the lower end of the chute directional control. Leave the other flat washer in place on the end of the rod.

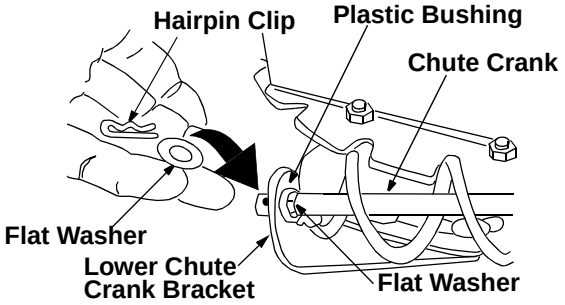


Figure 9

- Insert the lower end of the chute directional control into the hole in the plastic bushing in the chute directional control support bracket. See Figure 8.
- Place the other flat washer onto the end of the chute directional control, and secure with hairpin clip. See Figure 9.
- Tighten the nuts on the chute directional control support bracket securely.
- Adjust the eyebolt on the chute directional control so the chute directional control does not touch the engine.
- Move the hex nut against the handle (if necessary).
- Tighten wing nut with eye bolt to secure chute directional control.

Model 663H

For packaging purposes, the two-piece chute directional control was attached to the snow thrower on the two ends, but was kept loose at the middle. Assemble as follows:

- Remove the hairpin clip from the chute directional control. Align holes on the upper and lower pieces of the chute directional control, and insert the hairpin clip again. See Figure 10.

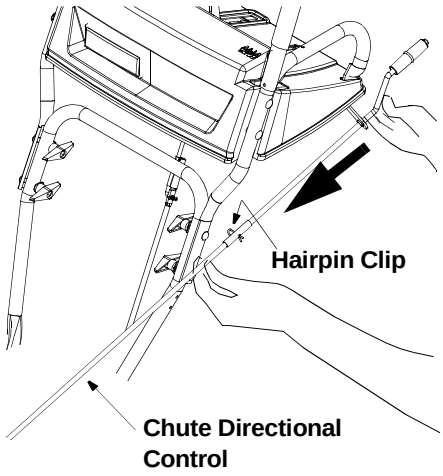


Figure 10

Final Adjustments

Chute Directional Control Support Bracket

To adjust the chute directional control support bracket, refer to Figure 8 and accompanying instructions.

Traction Control and Shift Lever

To check the adjustment of the traction control and shift lever, proceed as follows:

- Move the shift lever into sixth (6) position.
- With traction control released, gently push the snow thrower forward, then pull it back. The machine should move freely.
- Engage traction control, and try to move the machine both forward and back. You should experience resistance.
- Move the shift lever into the fast reverse (R2) position and repeat the previous two steps.

If you experienced resistance either when repositioning the shift lever from 6 to R2 or when attempting to move the machine with the traction control released, you should NOT operate the snow thrower before adjusting the traction control. To adjust, proceed as follows:

- Loosen the jam nut on the traction control cable and UNTHREAD the cable one full turn.
- Recheck adjustment.
- Retighten the jam nut to secure the cable when correct adjustment is reached.

NOTE: *For more details, refer to Traction Control Adjustment on page 12.*

Auger Control

Check the adjustment of the auger control as follows:

- Push down on the auger control until the small rubber bumper contacts the upper handle. There should be slack in the auger control cable.

- Release the auger control. The cable should be straight. Make certain you can depress the auger control against the left handle completely.
- If adjustment is necessary, proceed as follows:
- Loosen the jam nut and thread the cable in (for less slack) or out (for more slack) as necessary. See Figure 11.

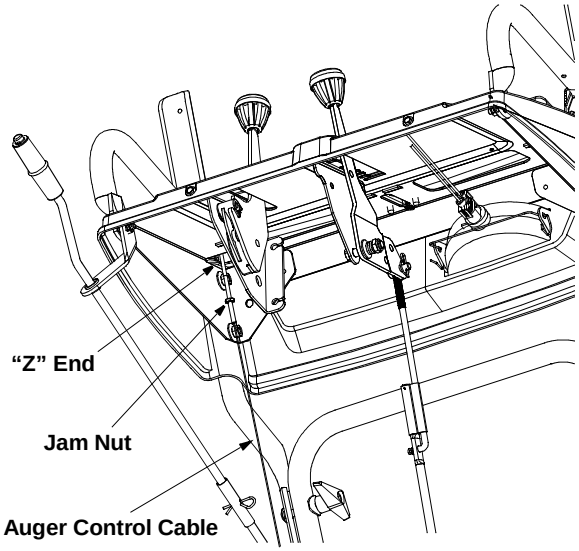


Figure 11

- Recheck adjustment; readjust as necessary and tighten the jam nut.

Skid Shoe

The space between the shave plate and the ground can be adjusted by repositioning the skid shoes found on either side of the snow throwers auger housing. For close snow removal, place skid shoes in the low position. Use middle or high position when area to be cleared is uneven. See Figure 12. When operating on gravel, always put skid shoes in the high position.

Adjust skid shoes as follows:

- Loosen, but do not remove, the two hex nuts which fasten the skid shoe to the auger housing.
- Raise or lower the skid shoe to desired position.

NOTE: *Make certain the entire bottom surface of skid shoe is against the ground to avoid uneven wear on the skid shoes.*

- Retighten the hex nuts loosened earlier.
- Repeat on the other side of the snow thrower.

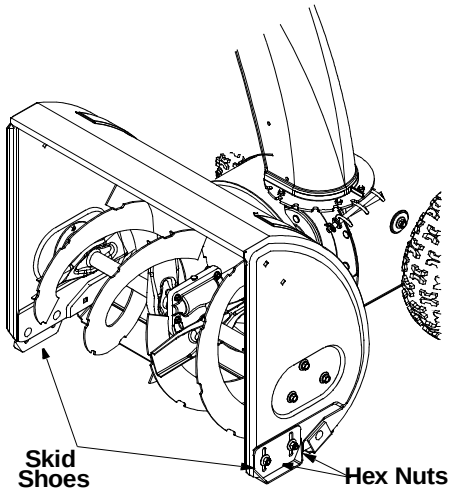


Figure 12

Tire Pressure (Pneumatic Tires)

The tires are overinflated for shipping purposes.

- Check tire pressure. Maintain pressure between 15 to 20 psi. Refer to tire sidewalls for recommended tire pressure.

NOTE: *If the tire pressure is not equal in both tires, the unit may pull to one side or the other.*

WARNING: Maximum tire pressure under any circumstance is 30 psi. Equal tire pressure should be maintained at all times. Excessive pressure (over 30 psi) when seating beads may cause tire/rim assembly to burst with force sufficient to cause serious injury.

SECTION 3: KNOW YOUR SNOW THROWER

WARNING: Be familiar with all the controls and their proper operation. Know how to stop the machine and disengage them quickly.

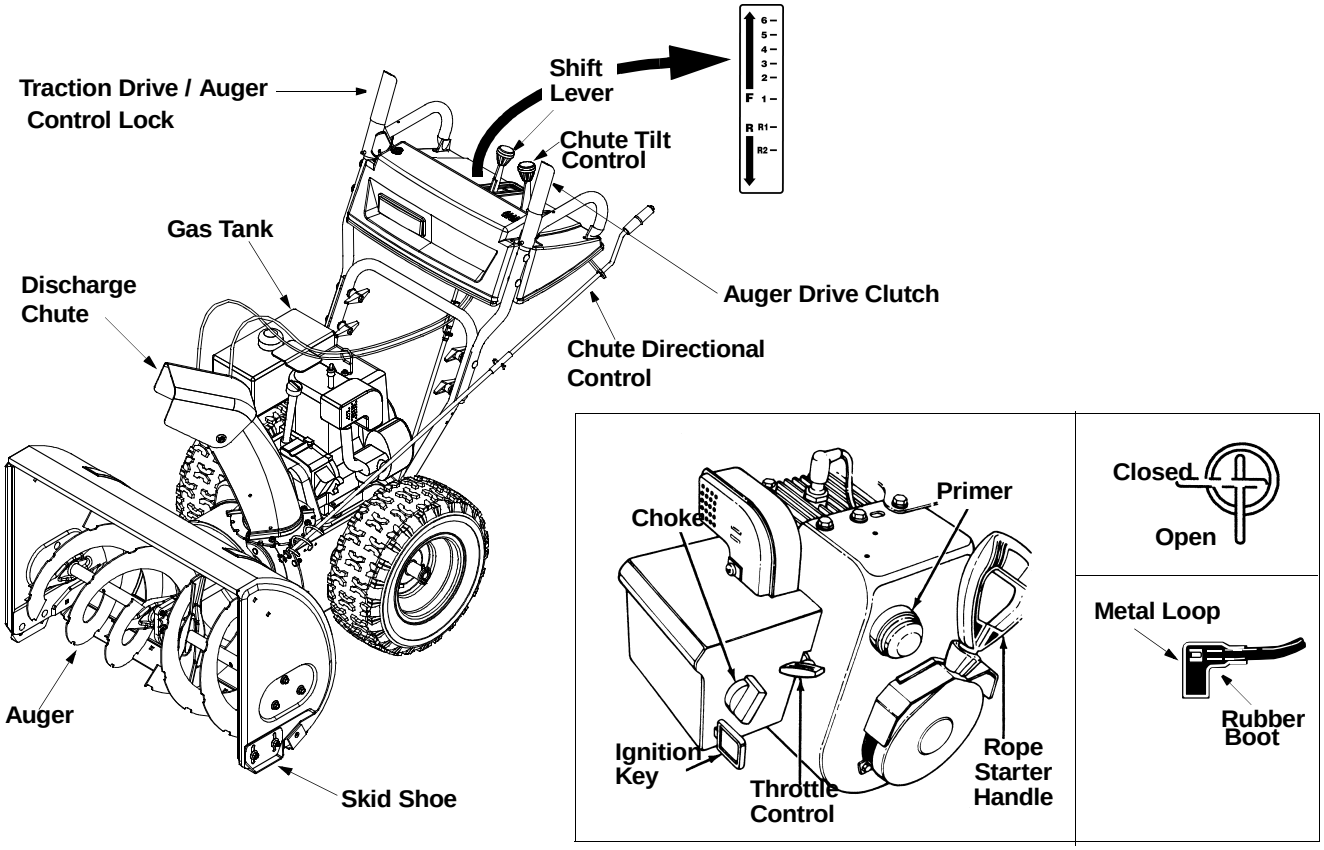


Figure 13

Traction Control

The traction control is located on the right handle. Squeeze the traction control to engage the wheel drive. Release to stop.

Auger Control Lock

The traction control lever also locks the auger control so you can turn the chute directional control without interrupting snow throwing. If the auger control lock is engaged along with the traction control, you can release the auger drive clutch on the left handle and still keep the augers engaged. When the auger control lock is released, you can release the traction control to stop both the augers and the wheel drive.

IMPORTANT: Always release traction control before changing speeds.

Auger Drive

The auger drive clutch is located on the left handle. Squeeze the clutch grip to engage the augers. Release to stop the snow throwing action. (Traction drive clutch must also be released.)

Shift Lever

The shift lever is located in the center of the handle panel and is used to determine both ground speed and direction of travel. It can be moved into any of eight positions. Always release traction control before changing speeds.

Forward: Your snow thrower has six forward (F) speeds. Position number one (1) is the slowest. Position number six (6) is the fastest.

Reverse: Your snow thrower has two reverse (R) speeds. R1 is the slower, while R2 is faster.

Chute Directional Control

The chute directional control is located on left side of the snow thrower.To change the direction in which snow is thrown, turn chute directional control as follows:

- Crank clockwise to discharge to the left.
- Crank counterclockwise to discharge to the right.

Chute Tilt Control

The distance snow is thrown can be adjusted by adjusting the angle of the chute assembly. Move the chute tilt control forward to decrease the distance, and towards the rear to increase the distance.

Discharge Chute

The angle of the discharge chute controls the distance that the snow is thrown. Tilt the discharge chute up for greater distance; tilt down for less distance.

Fuel Shut-off Valve (If equipped)

If your snow thrower is equipped with a fuel shut-off valve, locate it under the fuel tank. This valve controls fuel flow from the tank. Always make certain it is in the open (vertical) position before attempting to start the engine. See Figure 13.

Headlight

The headlight is on whenever the engine is running.

Throttle Control

The throttle control is located on the engine. It regulates the speed of the engine.

Safety Ignition Key

The safety ignition key must be fully inserted in the switch before the unit will start. Remove key when snow thrower is not in use. Do not attempt to turn the key.

Skid Shoe

The position of the skid shoe is determined by the condition of the ground from where snow has to be removed. Refer to page 8 for details.

SECTION 4: OPERATING YOUR SNOW THROWER

Before Starting

WARNING: Read, understand, and follow all instructions and warnings on the machine and in this manual before operating.

- The spark plug wire was disconnected for safety. Attach spark plug wire to spark plug before starting.

Gas and Oil Fill-Up

- Check oil and gasoline level and add if necessary. Follow related instructions in the seperate engine manual packed with your snow thrower.

WARNING: Use extreme care when handling gasoline. Gasoline is extremely flammable and the vapors are explosive. Never fuel the machine indoors or while the engine is hot or running. Extinguish cigarettes, cigars, pipes and other sources of ignition.

To Start Engine

- Make certain the fuel cut-off valve, if your snow thrower is so equipped, is in OPEN position.
- Make certain the auger and drive clutch levers are in the disengaged (released) position.
- Move throttle control up to FAST position. Insert ignition key into slot. Make sure it snaps into place. **Do not turn key.**

NOTE: *Engine will not start unless ignition key is inserted into ignition slot in carburetor cover.*

Electric Starter

WARNING: The electric starter is equipped with a grounded three-wire power cord and plug, and is designed to operate on 120 volt AC household current. It must be used with a properly grounded three-prong receptacle at all times to avoid the possibility of electric shock. Follow all instructions carefully prior to operating the electric starter.

- Determine that your house wiring is a three-wire grounded system. Ask a licensed electrician if you are not certain.
- **If your house wiring system is not a three-wire grounded system,** do not use this electric starter under any conditions.
- **If your home electrical system is grounded,** but a three-hole receptacle is not available, one should be installed by a licensed electrician before using the electric starter.
- **If you have a grounded three-prong receptacle,** proceed as follows.
- Rotate choke knob to OFF position.
- Connect power cord to switch box on engine. Plug the other end of power cord into a three-prong 120-volt, grounded, AC receptacle.
- Push starter button to crank engine. As you crank the engine, move choke knob to FULL choke position.
- When engine starts, release starter button, and move choke gradually to OFF. If engine falters, move choke immediately to FULL and then gradually to OFF.

- When disconnecting the power cord, always unplug from the three-prong receptacle first, and then from the snow thrower.

Recoil Starter

- Rotate choke knob to FULL choke position (cold engine start).
- If engine is warm, place choke in OFF position instead of FULL.
- Push primer button two or three times for cold engine start.
- If engine is warm, push primer button only once.

NOTE: *Always cover vent hole in primer button when pushing. Additional priming may be necessary for first start if temperature is below 15 degrees Fahrenheit.*

- Grasp starter handle and pull rope out slowly, until it pulls slightly harder. Let rope rewind slowly.
- Pull starter handle rapidly. Do not allow handle to snap back. Allow it to rewind slowly while keeping a firm hold on the starter handle.
- As engine warms up and begins to operate evenly, rotate choke knob slowly to OFF position. If engine falters, return to FULL choke, then slowly move to OFF position.

To Stop Engine

- To stop engine, remove the ignition key. Do not turn key. Disconnect the spark plug wire from the spark plug to prevent accidental starting while equipment is unattended.

To help prevent possible freeze-up of starter, proceed as follows:

- Run engine for a few minutes before stopping to help dry off any moisture on the engine.
- **Electric Starter:** Connect power cord to switch box on engine, then to 120 volt AC receptacle. With the engine running, push starter button and spin the starter for several seconds. The unusual sound made by spinning the starter will not harm engine or starter. Disconnect the power cord from receptacle first, and then from switch box.
- **Recoil Starter:** With engine running, pull starter rope with a rapid, continuous full arm stroke three or four times. Pulling the starter rope will produce a loud clattering sound, which is not harmful to the engine or starter.
- Wipe all snow and moisture from the carburetor cover in the area of the control levers. Also, move control levers back and forth several times. Leave throttle control lever in the STOP or OFF position. Leave choke control in the FULL choke position.
- Remove ignition key and disconnect spark plug wire. Do not turn key.

IMPORTANT: Do not lose ignition key. Keep it in a safe place. Engine will not start without the ignition key.

To Engage Drive

- With the engine running near top speed, move shift lever into one of the six forward positions or two reverse positions. Select a speed appropriate for the snow conditions that exist.

NOTE: *Use the slower speeds until you are familiar with the operation of the snow thrower.*

- Squeeze the traction control against the right handle and the snow thrower will move. Release it and the drive motion will stop.

IMPORTANT: Never move shift lever without first releasing the traction control. Doing so will cause premature wear to drive system's friction wheel rubber.

To Engage Augers

To engage the augers and start snow throwing, squeeze the auger control against the left handle.

To disengage augers, release both the auger control and the traction control, if engaged.

NOTE: *The auger control can also be locked so that you can turn the chute directional control without interrupting snow throwing. Refer to previous section for details*

Tire Chains (If equipped)

Tire chains should be used whenever extra traction is needed. Call our Customer Support Department, as instructed on Page 2, for information on tire chains and other optional accessories.

Operating Tips

NOTE: *Allow the engine to warm up for a few minutes as the engine will not develop full power until it reaches operating temperature.*

WARNING: Temperature of muffler and surrounding areas may exceed 150^{o}F. Avoid these areas.

- For most efficient snow removal, remove snow immediately after it falls.
- Discharge snow downwind whenever possible. Slightly overlap each previous swath.
- Set the skid shoes 1/4" below the shave plate for normal usage.
- Clean the snow thrower thoroughly after each use.

SECTION 5: MAKING ADJUSTMENTS

WARNING: NEVER attempt to clean chute or make any adjustments while engine is running.

Chute Assembly

The distance snow is thrown can be adjusted by changing the angle of the chute assembly. Refer to Chute Tilt Control on page 10.

Skid Shoe

The space between shave plate and ground can be adjusted by raising or lowering the skid shoes. Refer to Skid Shoe Adjustment on page 8.

Traction Control

Refer to Final Adjustments on page 7 to adjust traction control. If you are want to check further for correct adjustment, proceed as follows:

WARNING: Drain the gasoline out of your snow thrower's engine, place a piece of plastic film under the gas cap to avoid spillage before beginning to perform this adjustment.

- Tip the snow thrower forward, allowing it to rest on the auger housing.
- Remove the frame cover underneath the snow thrower by removing six self-tapping screws.
- With the traction control released, there must be clearance between the friction wheel and the drive plate in all positions of the shift lever.
- With the traction control engaged, the friction wheel must contact the drive plate. See Figure 14.

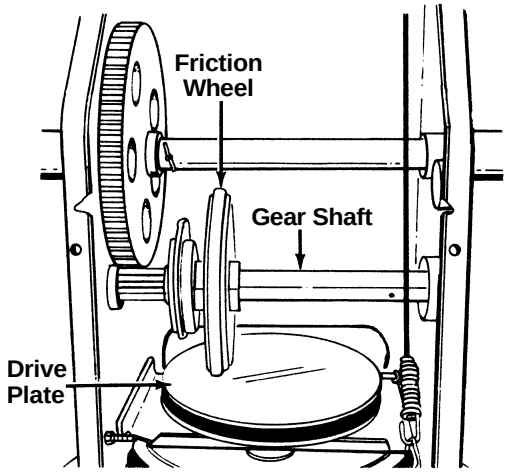


Figure 14

If adjustment is necessary:

- Loosen the jam nut on the traction drive cable and thread the cable in or out as necessary.
- Retighten the jam nut to secure the cable when correct adjustment is reached.
- Reassemble the frame cover.

NOTE: *If you placed plastic film under the gas cap, be certain to remove it before operating the snow thrower.*

Auger Control

Refer to details on page 7 to adjust the auger control.

Shift Rod

To adjust the shift rod, proceed as follows.

- Remove the hairpin clip and slide the connector up to separate the upper shift rod from the lower shift rod. See Figure 15.

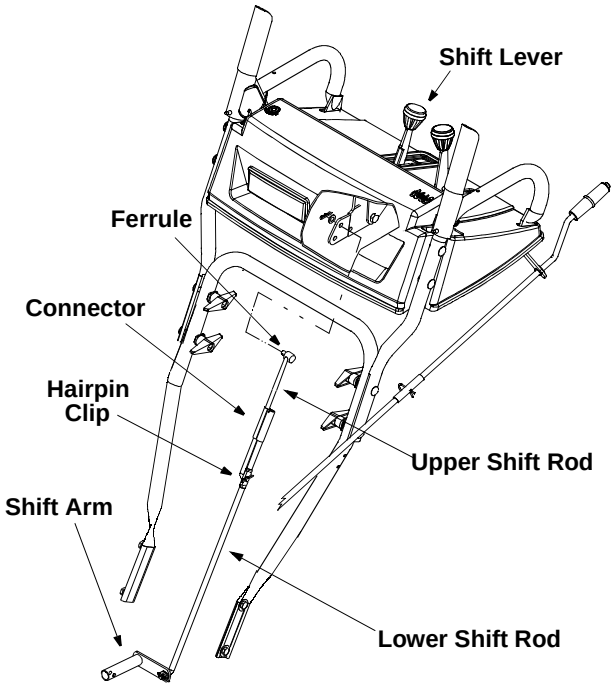


Figure 15

- Place shift lever in sixth (6) position.
- Rotate the shift arm counterclockwise (from the operator's position) as far as it will go.
- Thread the upper shift rod downward until the elbow on its lower end aligns with the hole found in the lower shift rod.
- Reconnect the upper shift rod to the lower shift rod by reinserting the cotter pin removed earlier and sliding the connector back down into place.

IMPORTANT: Check for correct adjustment of the shift rod as instructed on page 7, before operating the snow thrower.

Drive Wheels

The wheels may be adjusted for two different methods of operation. The adjustment is made by placing the click pins in one of two different holes on the right side of the unit. See Figure 16.

One Wheel Driving—Insert the click pin only through the outside hole of the axle (not the rim) on the right side of the snow thrower. This position gives power drive to the left wheel only, making the unit easier to maneuver.

Both Wheels Driving—Insert the click pin through the hole in the hub of the rim and the inside hole on the snow thrower's right axle. This position is good for heavy snow as there is power drive in both wheels.

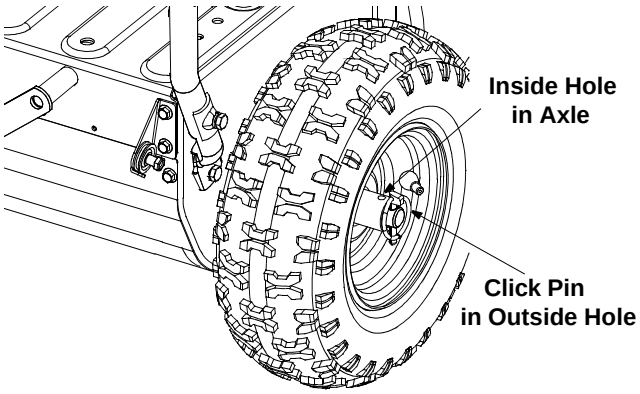


Figure 16

IMPORTANT: Never operate the snow thrower with the click pin inserted through both the rim and the outside hole in the axle. Doing so can result in serious damage to the drive system.

SECTION 6: MAINTAINING YOUR SNOW THROWER

Lubrication

Before lubricating, repairing, or inspecting, disengage all clutch levers and stop engine. Wait until all moving parts have come to a complete stop. Disconnect spark plug wire and ground it against the engine to prevent unintended starting.

Wheels

- Oil or spray lubricant into plastic wheel bearings inside the wheel hubs at least once a season. Remove wheels, clean and coat axles with a multi-purpose automotive grease. See Figure 17.

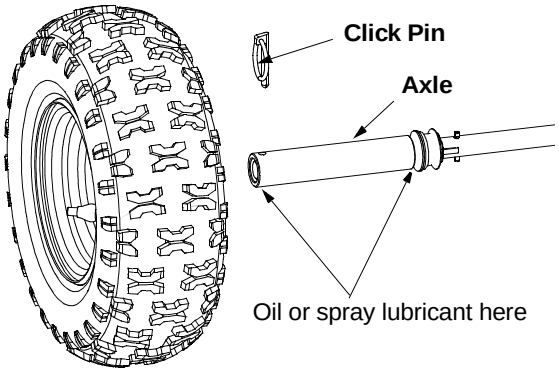


Figure 17

Gear Shaft

Lubricate the gear shaft with 6-in-1 grease (part number 737-0170) at least once a season, or after every 25 hours of operation. Refer to Figure 14.

IMPORTANT: Keep all grease and oil off the rubber friction wheel and aluminum drive plate.

Chute Directional Control

The spiral on the end of the chute directional control and the base of the discharge chute itself should be lubed with multi-purpose automotive grease once a season. See Figure 19.

Engine

Refer to the seperate engine manual packed with your unit for all engine lubrication instructions.

Auger Shaft

- At least once a season, remove shear bolts from auger shaft. Oil or spray lubricant inside shaft. See Figure 18. Also lubricate the plastic auger bearings at least once a season.

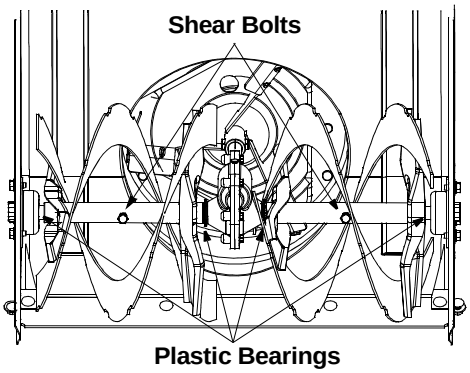


Figure 18

Drive and Shifting Mechanism

At least once a season or after every 25 hours of

operation, remove rear cover. Lubricate any chains, sprockets, gears, bearings, shafts, and shifting mechanism at least once a season. Use engine oil or a spray lubricant. Avoid getting oil on rubber friction wheel and aluminum drive plate. Refer to Figure 14.

Gear Case

The gear case is lubricated with grease at the factory and does not require checking. If disassembled for any reason, lubricate with two ounces of Shell Alvania™ grease EPR00, part number 737-0168. Before reassembling, remove old sealant and apply Loctite™ 5699 or equivalent.

IMPORTANT: Do not overfill the gear case. Be sure the vent plug is free of grease in order to relieve pressure.

Traction Control / Auger Control Lock

The cams on the ends of the control rods which interlock the traction drive and auger drive clutches must be lubricated at least once a season or every twenty five hours of operation. The cams can be accessed beneath the handle panel. Use a multi-purpose automotive grease.

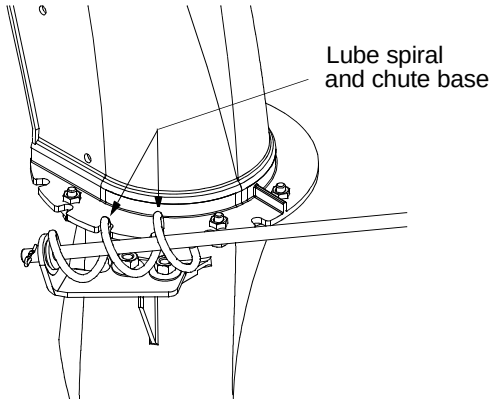


Figure 19

SECTION 7: SERVICE

WARNING: Before servicing, repairing, or inspecting, disengage all clutch levers and stop engine. Wait until all moving parts have come to a complete stop. Disconnect spark plug wire and ground it against the engine to prevent unintended starting.

Shave Plate and Skid Shoes

- The shave plate and skid shoes on the bottom of the snow thrower are subject to wear. They should be checked periodically and replaced when necessary.
- To remove skid shoes, remove the four carriage bolts, belleville washers and hex nuts which attach them to the snow thrower. Reassemble new skid shoes with the four carriage bolts, belleville washers (cupped side goes against skid shoes) and hex nuts. Make certain the skid shoes are adjusted to be level.
- To remove shave plate, remove the carriage bolts, belleville washers and hex nuts which attach it to the snow thrower housing. Reassemble new shave plate, making sure heads of the carriage bolts are to the inside of the housing. Tighten securely.

Belt Removal and Replacement

WARNING: Disconnect the spark plug wire from the spark plug and ground.

Auger Belt(s)

- Remove the plastic belt cover on front of the engine by removing the two self-tapping screws. See Figure 20.

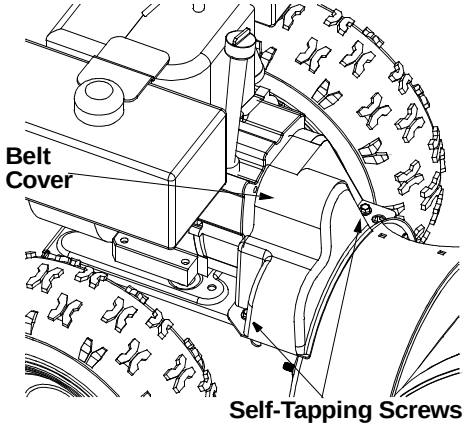


Figure 20

- Drain the gasoline from the snow thrower, or place a piece of plastic film under the gas cap.
- Tip the snow thrower up and forward so that it rests on its auger housing.
- Remove six self-tapping screws from the frame cover underneath the snow thrower.
- Roll the front and rear auger belts off the engine pulley. See Figure 21.

NOTE: *Model E633 has only one auger belt. Disregard any instructions regarding the second auger belt if you have this model of snow thrower.*

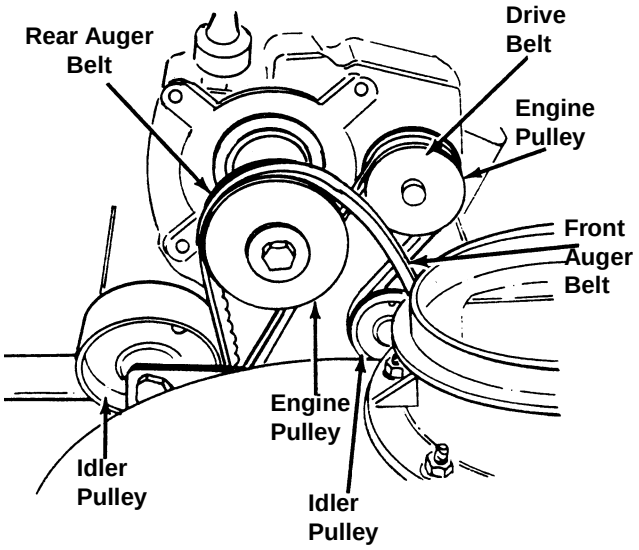


Figure 21

- Unhook the idler spring from the hex bolt on the auger housing. See Figure 22.
- Back out the stop bolt until the support bracket rests on the auger pulley. See Figure 23.

NOTE: *It may be necessary to loosen the six nuts that connect the frame to the auger housing to aid in belt removal.*

- Lift the rear auger belt from the auger pulley, and slip belt between the support bracket and the auger pulley. See Figure 22. Repeat this step for the front auger belt.

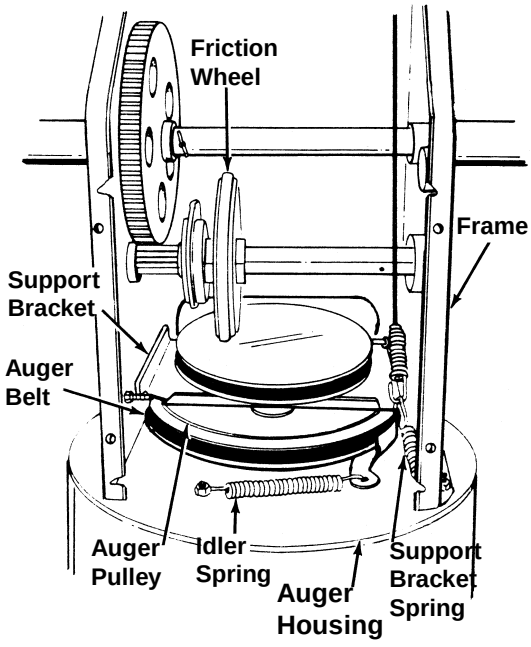


Figure 22

- Replace both auger drive belts by following instructions in reverse order.

NOTE: *If you placed plastic film under the gas cap, be certain to remove it before operating the snow thrower.*

Drive Belt

- Follow the first four steps of the instructions for servicing the auger belts.
- Pull idler pulley up, and lift belt off engine pulley and friction wheel disc. See Figure 21.
- Back out the stop bolt until the support bracket rests on the auger pulley. See Figure 23.
- Slip belt between friction wheel and friction wheel disc. See Figure 23. Remove and replace belt.
- Reassemble the parts removed earlier.

NOTE: *The support bracket must rest on the stop bolt after the new belt has been assembled. See Figure 23.*

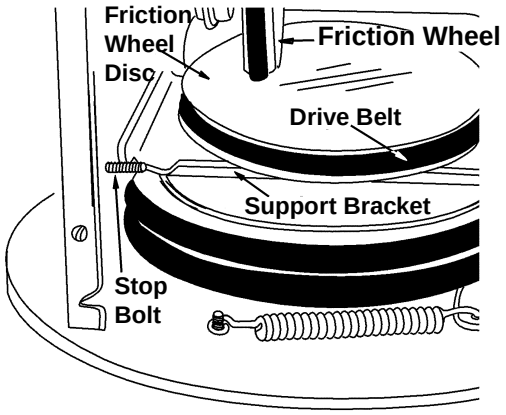
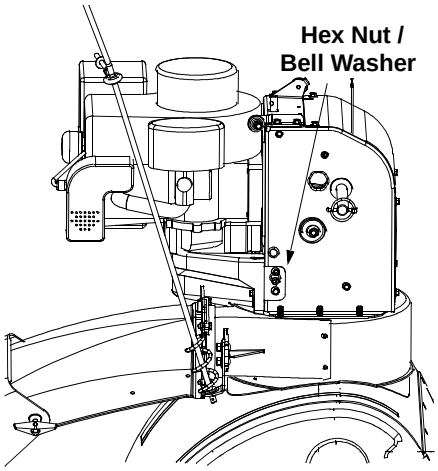


Figure 23

Changing Friction Wheel Rubber

The rubber on the friction wheel is subject to wear and should be checked after 25 hours of operation, and periodically thereafter. Replace the friction wheel rubber if any signs of wear or cracking are found.

- Drain the gasoline from the snow thrower, or place a piece of plastic under the gas cap.
- Tip the snow thrower up and forward, so that it rests on the housing.
- Remove six self-tapping screws from the frame cover underneath the snow thrower.
- Remove the click pins which secure the wheels, and remove the wheels from the axle.
- Using a 7/8" wrench to hold the shaft, loosen, but do not completely remove, the hex nut and bell washer on the left end of gear shaft. See Figure 24.



Snow thrower shown resting on its auger housing; wheels not shown for clarity.

Figure 24

- Lightly tap the hex nut to dislodge the ball bearing from the right side of frame before removing the hex nut and bell washer from left end of shaft.
- Move the gear shaft to the right and slide the friction wheel assembly from the shaft.
- Remove the six screws from the friction wheel assembly (three from each side). Remove the friction wheel rubber from between the friction wheel plates. See Figure 25.

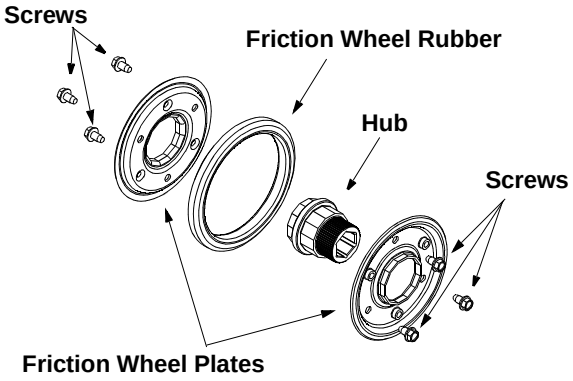


Figure 25

- Reassemble new friction wheel rubber to the friction wheel plates and hub, tightening the six screws in rotation and with equal force.
- Position the friction wheel assembly up onto the pin of the shift rod assembly, and slide the shaft through the assembly. Reassemble in reverse order.

NOTE: *If you placed plastic film under the gas cap, be certain to remove it.*

Augers

The augers are secured to the spiral shaft with two shear bolts and hex lock nuts. See Figure 26. If you hit a foreign object or ice jam, the snow thrower is designed so that the bolts may shear.

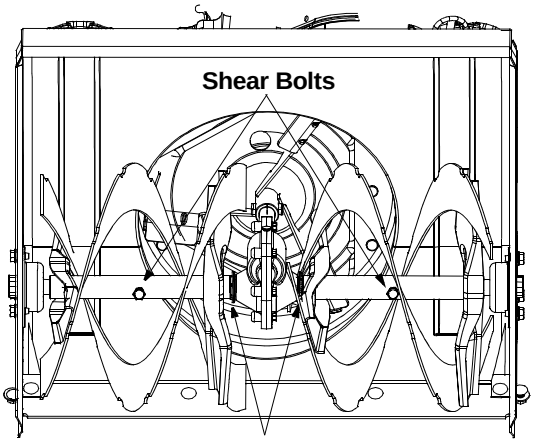


Figure 26

If the augers do not turn, check if the bolts have sheared. Two replacement shear bolts and hex lock nuts have been provided with the snow thrower. Refer to Loose Parts on page 5. For future use, order kit number OEM-710-0890.

IMPORTANT: NEVER replace the auger shear bolts with standard hex bolts. Any damage to the auger gearbox or other components, as a result of doing so, will NOT be coved by your snow thrower's warranty.

Engine

- Refer to the engine manual for all engine related service procedures.

SECTION 8: OFF-SEASON STORAGE

WARNING: Never store engine with fuel in tank indoors or in poorly ventilated areas, where fuel fumes may reach an open flame, spark or pilot light as on a furnace, water heater, clothes dryer or other gas appliance.

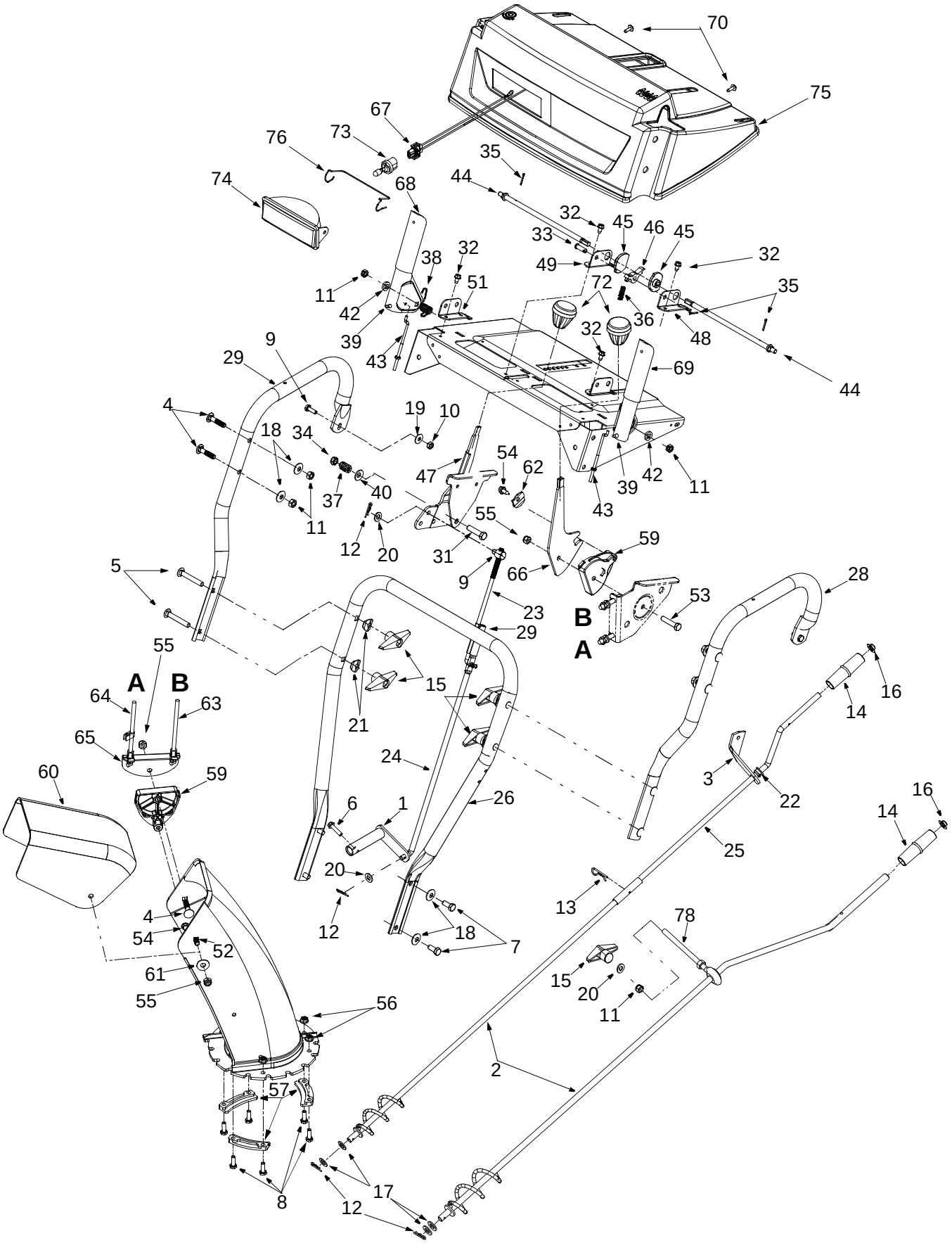
- If unit is to be stored over 30 days, prepare engine for storage as instructed in the engine manual.
- Remove all debris from the exterior of equipment.
- Follow lubrication recommendations on page 13.
- Always store the snow thrower in a clean, dry area.

NOTE: *When storing any type of power equipment in an unventilated or metal storage shed, care should be taken to rust proof the equipment. Using a light oil or silicone, coat the equipment, especially any chains, springs, bearings and cables.*

SECTION 9: TROUBLESHOOTING

Problem	Cause	Remedy
Engine fails to start	1. Fuel tank empty, or stale fuel.	1. Fill tank with clean, fresh gasoline. Fuel becomes stale after thirty days unless a fuel stabilizer is used.
	2. Blocked fuel line.	2. Clean the fuel line.
	3. Choke not in ON position	3. Move switch to ON position
	4. Faulty spark plug.	4. Clean, adjust gap or replace.
	5. Safety key not in ignition switch on engine.	5. Insert the key fully into the switch.
	6. Spark plug wire disconnected.	6. Connect spark plug wire.
	7. Primer button not being used properly.	7. Refer to the engine manual.
	8. Fuel shut-off valve (if equipped) closed.	8. Open fuel shut-off valve.
Engine runs erratic	1. Unit running on CHOKE.	1. Move choke lever to OFF position.
	2. Blocked fuel line or stale fuel.	2. Clean fuel line; fill tank with clean, fresh gasoline.
	3. Water or dirt in fuel system.	3. Drain fuel tank and carburetor. Refill with fresh fuel.
	4. Carburetor out of adjustment.	4. Refer to the engine manual or have carburetor adjusted by an authorized engine service dealer.
Loss of power	1. Spark plug wire loose.	1. Connect and tighten spark plug wire.
	2. Gas cap vent hole plugged.	2. Remove ice and snow from gas cap. Be certain vent hole is clear.
	3. Exhaust port plugged.	3. Refer to the engine manual.
Engine overheats	1. Carburetor not adjusted properly.	1. Refer to the engine manual or have the carburetor adjusted by an authorized engine service dealer.
Excessive vibration	1. Loose parts or damaged auger.	1. Stop engine immediately and disconnect spark plug wire. Tighten all bolts and nuts. If vibration continues, have unit serviced by an authorized service dealer.
Unit fails to propel itself	1. Traction control cable in need of adjustment.	1. Adjust traction control cable. Refer to pages 7 and 12.
	2. Drive belt loose or damaged.	2. Replace drive belt. Refer to page 14.
Unit fails to discharge snow	1. Discharge chute clogged.	1. Stop engine immediately and disconnect spark plug wire. Clean discharge chute and inside of auger housing.
	2. Foreign object lodged in auger.	2. Stop engine immediately and disconnect spark plug wire. Remove object from auger.
	3. Auger control cable in need of adjustment.	3. Adjust auger control cable. Refer to page 7.
	4. Auger belt loose or damaged.	4. Refer to page 14.
	5. Shear bolts sherared.	5. Replace shear bolts.

SECTION 10: PARTS LIST FOR MODELS E633 AND E663

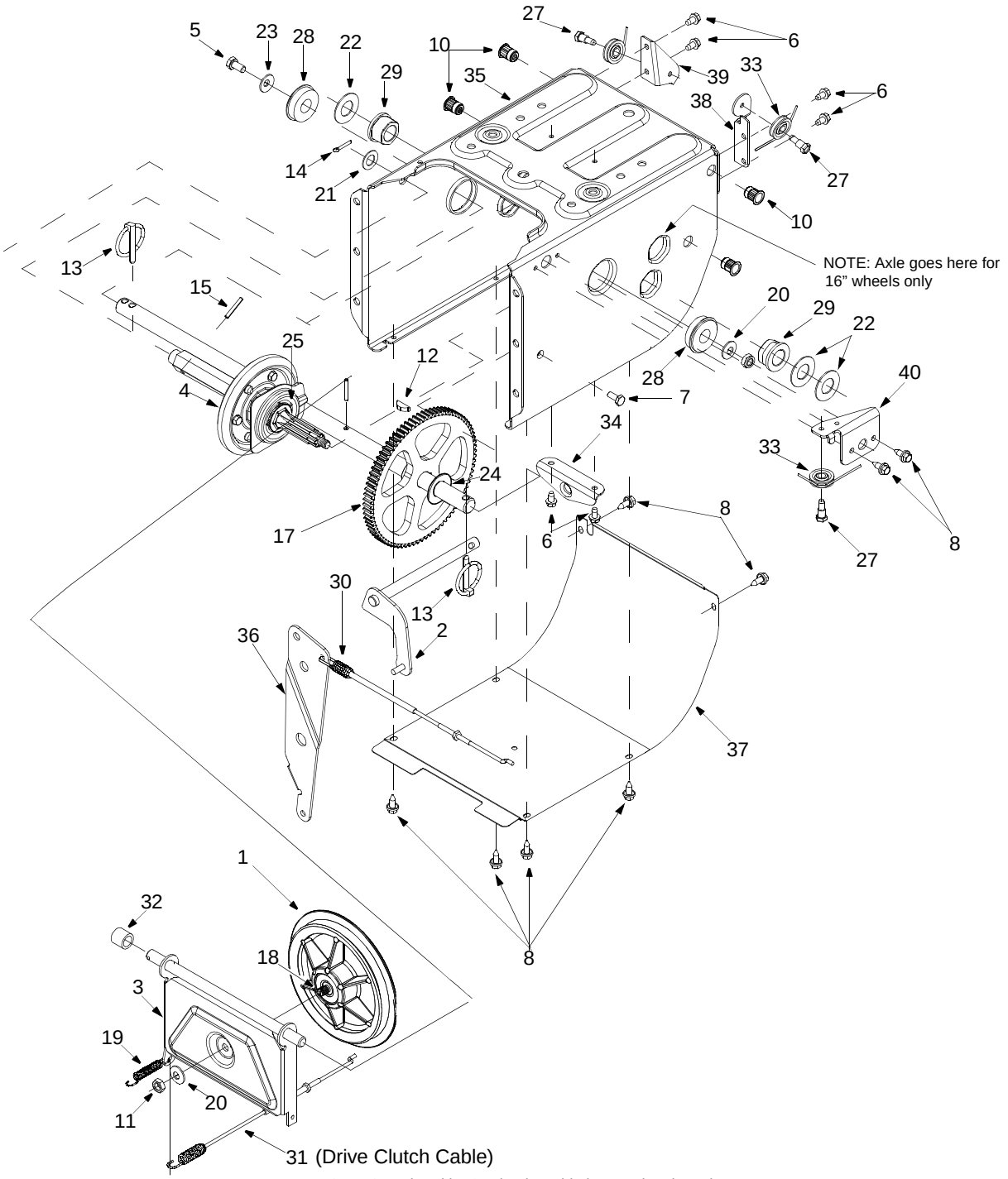


Models E633 and E663

Ref. No.	Part No.	Part Description
1.	684-0008A	Shift Arm Assembly
2.	684-0053A	Lower Chute Crank (E663)
	705-5204A	Chute Crank Ass'y (E633)
3.	705-5266	Chute Crank Bracket
4.	710-0262	Carriage Bolt, 5/16-18 x 1.5
5.	710-0449	Carriage Bolt, 5/16-18 x 2.25
6.	710-0788	Self Tapping Screw, 1/4-20 x 1
7.	710-3008	Hex Cap Screw, 5/16-18 x .75
8.	710-3015	Hex Cap Screw, 1/4-20 x .75
9.	711-0677	Ferrule, 5/16-18 x .312
10.	712-0287	Hex Nut, 1/4-20
11.	712-0429	Lock Nut
12.	714-0104	Internal Cotter Pin
13.	714-0145	Click Pin
14.	720-0201A	Chute Crank Knob
15.	720-0284	Wing Knob, 5/16-18
16.	726-0100	Push Cap, 3/8
17.	736-0185	Flat Washer, .375 x .738 x .063
18.	736-0242	Bell Washer, .34 x .872
19.	736-0270	Bell Washer, .265 x .75 x .062
20.	736-0275	Flat Washer, .344 x .688 x .065
21.	736-0451	Saddle Washer, .32 x .93
22.	741-0475	Plastic Bushing
23.	747-0620A	Upper Shift Rod
24.	747-0621	Lower Shift Rod
25.	747-0737	Upper Chute Crank (E663)
26.	749-0951	Lower Handle
27.	749-0954	RH Handle (Upper)
28.	749-0955	LH Handle (Upper)
29.	750-0963	Shift Rod Connector
30.	684-0102	Handle Panel Ass'y With Tilt
31.	710-0459A	Hex Cap Screw, 3/8-24 x 1.5
32.	710-0599	Self Tapping Screw, 1/4-20 x .5
33.	711-0653	Clevis Pin
34.	712-0116	Jam Nut, 3/8-24
35.	714-0104	Cotter Pin
36.	732-0145	Compression Spring, .36 x 1.0
37.	732-0193	Comp. Spring, .39 x .6 x .88
38.	732-0746	Torsion Spring, .44 x .8
39.	735-0199A	Rubber Bumper

Ref. No.	Part No.	Part Description
40.	736-0105	Bell Washer, .401 x .87 x .063
42.	736-0509	Special Washer, .35 x .72 x .13
43.	746-0778	Cable "Z" Fitting
44.	747-0877	Cam Rod
45.	748-0362	Cam Handle Lock
46.	748-0363	Handle Lock Pawl
47.	784-5619A	Shift Handle
48.	784-5679	LH Handle Support Bracket
49.	784-5680	RH Handle Support Bracket
50.	784-5681	LH Handle Support Bracket
51.	784-5682	RH Handle Support Bracket
52.	710-0451	Carriage Bolt, 5/16-18 x .75
53.	710-0805	Hex Cap Screw, 516-18 x 1.5
54.	710-0896	Screw, 1/4-14 x .625
55.	712-0429	Hex Lock Nut, 5/16-18
56.	712-3027	Hex Flange Lock Nut, 1/4-20
57.	731-0851A	Lower Chute Flange Keeper
58.	731-1300A	Lower Chute
59.	731-1313C	Chute Tilt Cable Guide
60.	731-1320	Upper Chute
61.	736-0159	Washer, 5/16
62.	736-0506	Special Washer, .28 x 1.2 x .06
63.	746-0896	Chute Deflector Control Cable
64.	746-0901	Chute Deflector Cable w/ Clip
65.	784-5594	Cable Bracket
66.	784-5604	Chute Tilt Handle
67.	629-0059	Halogen Light Harness
68.	684-0036	RH Engagement Handle Ass'y
69.	684-0059	LH Engagement Handle Ass'y
70.	710-1003	Special Screw, #10-16 x .625
71.	712-0271	Hex Sems Nut, 1/4-20 (for ground wire of light ass'y)
72.	720-0232	Plastic Knob
73.	725-1658	Halogen Lamp, 12-volt, 27 Watt
74.	725-1672	Lens Assembly / Lamp Housing
75.	731-1545	Handle Pane w/ Tiltl, Yellow
76.	747-1136	Headlamp Retainer
78.	747-0697	Eyebolt
—	735-0234	Eyebolt Grommet (Not Shown)

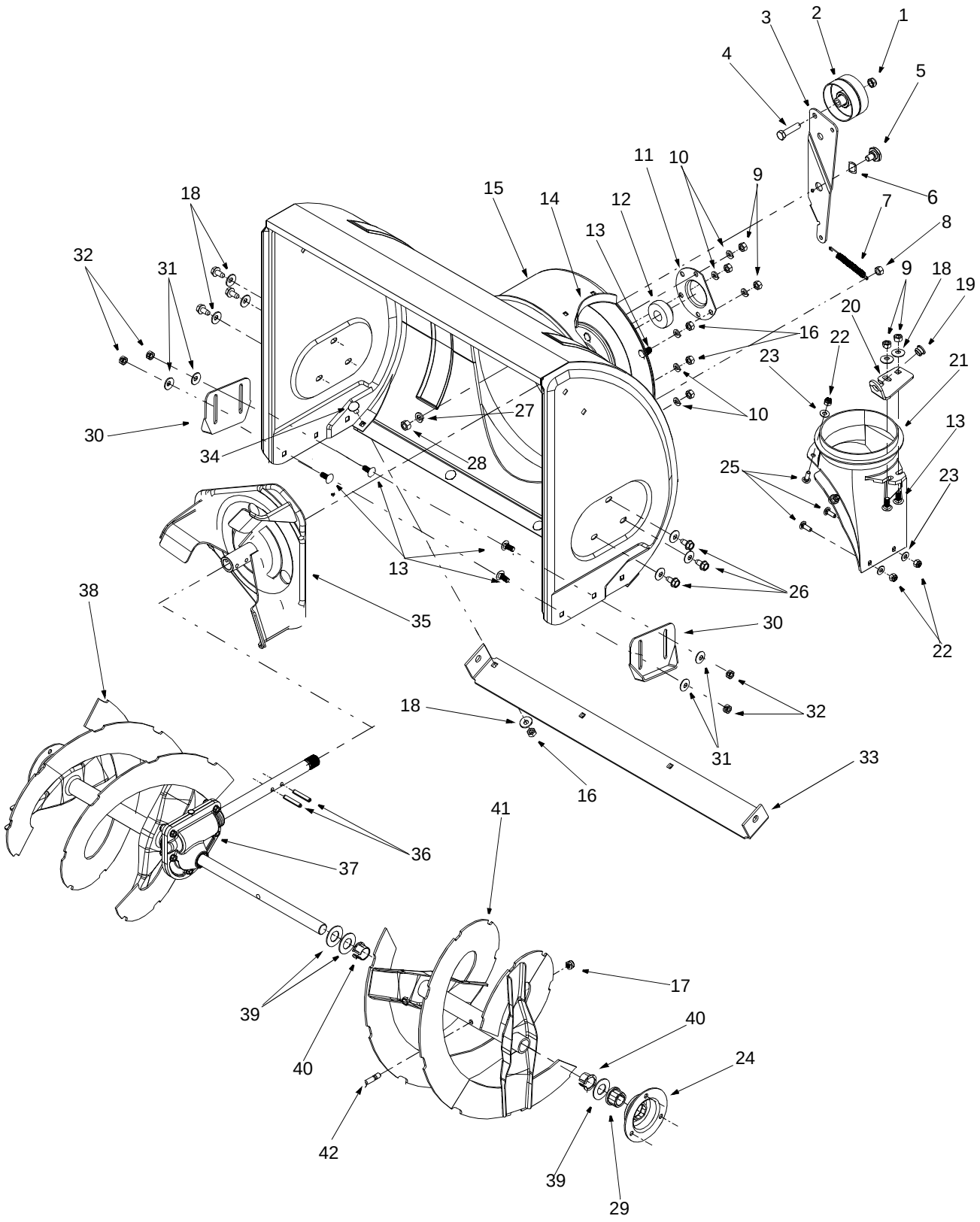
Models E633 and E663



Models E633 and E663

Ref. No.	Part No.	Part Description	Ref. No.	Part No.	Part Description
1.	656-0021A	Friction Wheel Disc Assembly	22.	736-0188	Flat Washer
2.	684-0013B	Shift Rod Assembly	23.	736-0242	Beleville Washer
3.	684-0021	Support Bracket: Friction Wheel	24.	736-0351	Flat Washer
4.	684-0042C	Bearing Assembly: Friction Wheel	25.	737-0170	Lubricant
5.	710-0538	Hex Bolt: 5/16-18 x .625”	26.	738-0869	Axle: Wheel
6.	710-0599	Self-Tapping Screw 1/4-20 x 0.5”	27.	738-0924	Carriage Screw
7.	710-0809	Self-Tapping Screw 1/4-20 x 1.25”	28.	741-0563	Ball Bearing
8.	710-1652	Self-Tapping Screw 1/4-20 x .625”	29.	741-0598	Hex Flange Bearing
9.	712-0116	Jam Lock Nut 3/8-24	30.	746-0897	Auger Clutch Cable
10.	712-0703	Nut Insert 5/16-18	31.	746-0898	Drive Clutch Cable
11.	712-0711	Jam Nut	32.	748-0190	Spacer
12.	714-0126	Key	33.	756-0625	Cable Roller
13.	714-0143	Klik Pin	34.	784-5590	Shift Bracket: Frame
14.	714-0474	Cotter Pin	35.	784-5630A	Frame: Snow Thrower
15.	715-0249	Roll Pin	36.	784-5632A	Auger Idler Arm
16.	717-1444	Hex Shaft —7 Tooth	37.	784-5638	Frame Cover
17.	717-1445	Gear — 80 Tooth	38.	784-5687A	Bracket: Auger Clutch Cable Guide
18.	721-0263	Loctite™ Adhesive	39.	784-5688	Bracket: Drive Cable Guide
19.	732-0264	Extension Spring	40.	784-5689A	Front Support Bracket: Auger Cable Guide
20.	736-0105	Spring Washer			
21.	736-0160	Flat Washer			

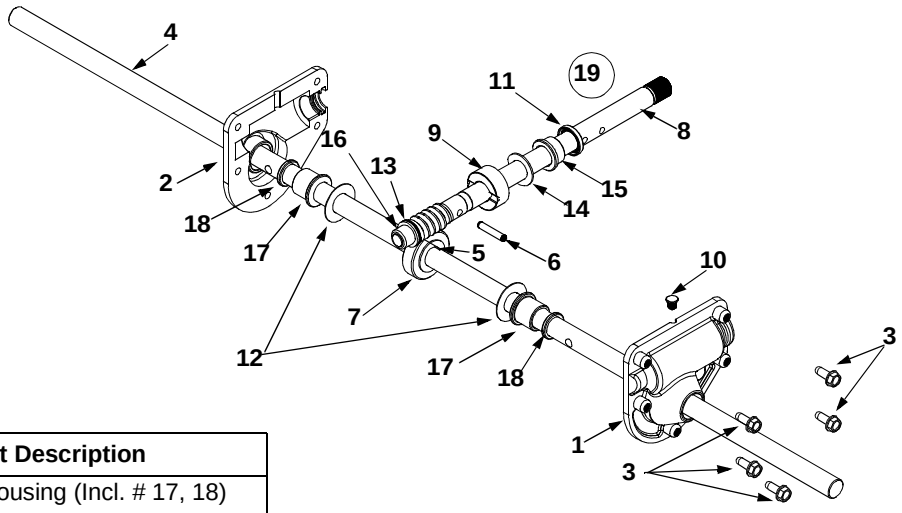
Models E633 and E663



Models E633 and E663

Ref. No.	Part No.	Part Description
1.	712-0116	Lock Jam Nut 3/8-24
2.	756-0178	Flat Idler
3.	784-5632A	Auger Idler Arm
4.	710-0459A	Hex Cap Screw 3/8-24 x 1.50
5.	738-0281	Shoulder Screw
6.	736-0174	Wave Washer
7.	732-0611	Extension Spring
8.	712-3068	Hex Nut 5/16-18
9.	712-3010	Hex Nut 5/16-18
10.	736-0119	Lock Washer 5/16
11.	05931	Housing
12.	741-0309	Ball Bearing
13.	710-0451	Carriage Bolt 5/16-18 x .75
14.	705-5226	Chute Reinforcement
15.	684-0055B	30” Housing Ass’y (E663)
	684-0039C	24” Housing Ass’y (E633)
16.	712-3010	Hex Nut 5/16-18
17.	712-0429	Lock Nut 5/16-18
18.	736-0242	Bell Washer
19.	741-0475	Bushing
20.	784-5647	Chute Crank Bracket
21.	731-1379A	Chute Adapter
22.	712-0324	Hex Lock Nut 1/4-20
23.	736-0463	Flat Washer

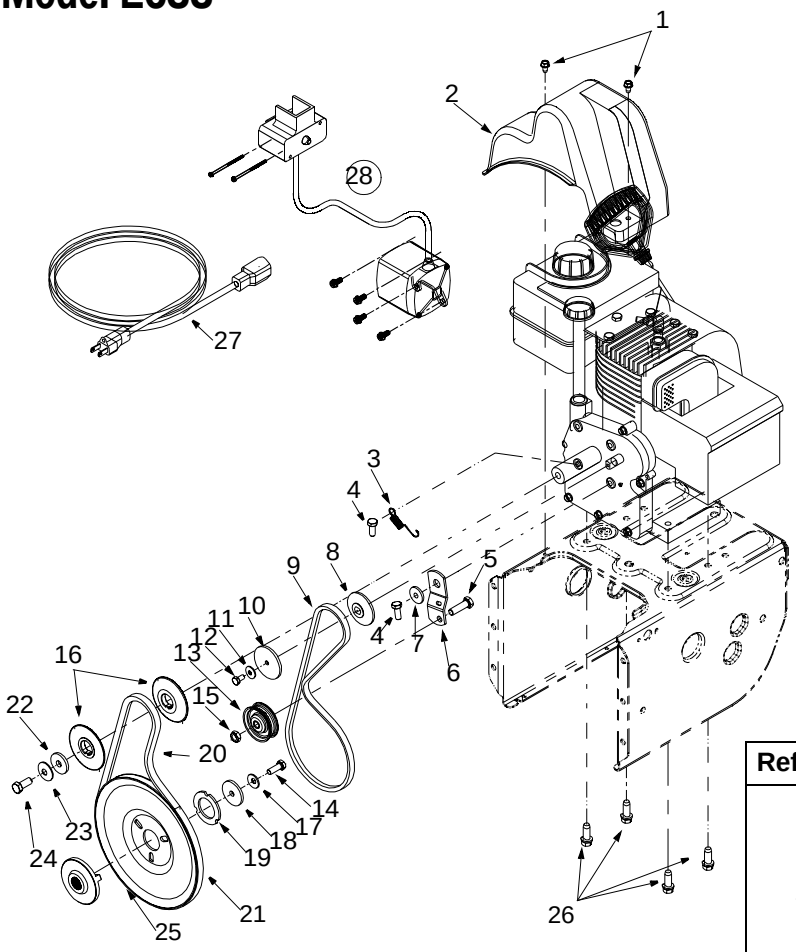
Ref. No.	Part No.	Part Description
24.	784-5618	Bearing Housing
25.	710-0703	Carriage Screw 1/4-20 x .75
26.	710-0604	Hex Washer Screw 5/16-18
27.	736-0169	Lock Washer 3/8
28.	712-0798	Hex Nut 3/8-16
29.	741-0245	Hex Flange Bearing
30.	784-5580	Skid Shoe
31.	736-0242	Bell Washer
32.	712-3010	Hex Nut 5/16-18
33.	784-5575	29.66” Shave Plate (E663)
	784-5581A	23.66” Shave Plate (E633)
34.	710-0260	Carriage Bolt 5/16-18 x .62
35.	684-0065	Impeller Assembly
36.	715-0114	Pin
37.	618-0160	30” Gear Assembly (E663)
	618-0120	24” Gear Assembly (E633)
38.	605-5248A	30” Spiral RH (E663)
	605-5188A	24” Spiral RH (E633)
39.	736-0188	Flat Washer
40.	741-0493A	Flange Bushing
41.	605-5249A	30” Spiral LH (E663)
	605-5189A	24” Spiral LH (E633)
42.	710-0890A	Shear Bolt 5/16-18 x 1.5



Ref. No.	Part No.	Part Description
1.	618-0123	RH Reducer Housing (Incl. # 17, 18)
2.	618-0124	LH Reducer Housing (Incl. # 17, 18)
3.	710-0642	Self Tapping Screw, 1/4-20 x .75
4.	711-1024	Spiral Axle, 30” (E663)
	711-0908	Spiral Axle, 24” (E633)
5.	714-0161	Hi-Pro Key, 3/16 x 5/8
6.	715-0143	Spring Spiral Pin, .25 x 1.25
7.	717-0528	Worm Gear, 20-tooth
8.	717-0526	Worm Shaft
9.	718-0186	Thrust Collar
10.	721-0325	Grease Plug
11.	721-0327	Grease Seal
12.	736-0351	Flat Washer, .76 x 1.5 x .030

Ref. No.	Part No.	Part Description
13.	736-0369	Flat Washer, .508 x 1.0 x .020
14.	736-0445	Flat Washer, .76 x 1.5 x .060
15.	741-0662	Flange Bearing, .75 x 1.0 x .59
16.	748-0663	Flange Bearing, .75 x 1.0 x .925
17.	741-0661	Flange Bearing, .754 x 1.0 x .925
18.	721-0179	Grease Seal
19.	618-0160	Gear Assembly Complete, 30” (E663)
	618-0120	Gear Assembly Complete, 24” (E633)
—	737-0168	Grease (2 Ounces)

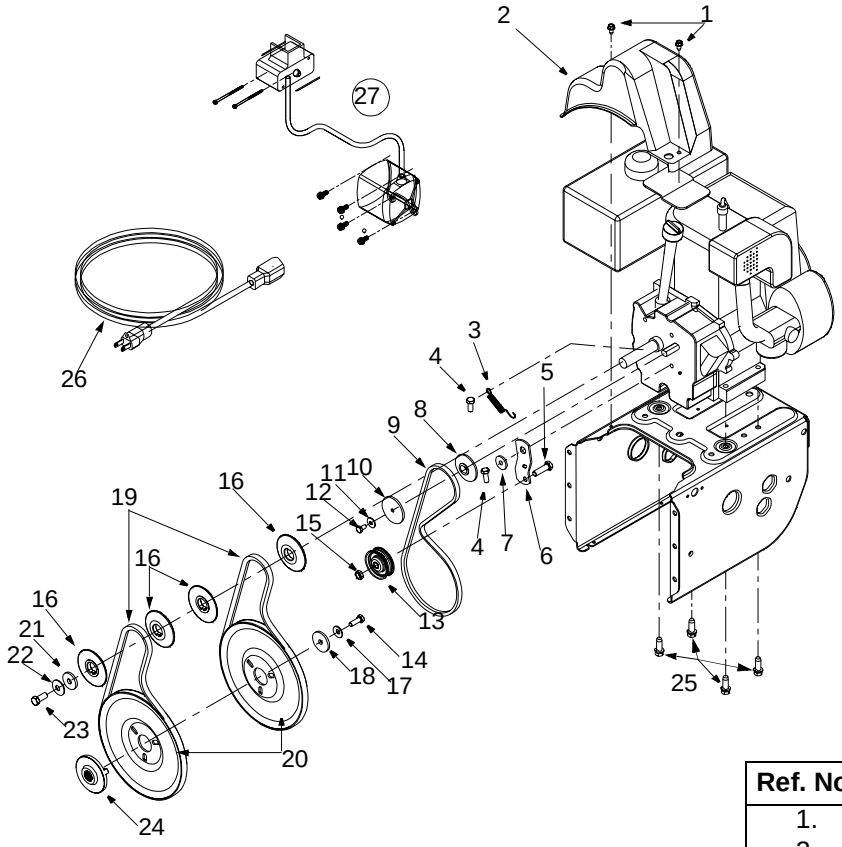
Model E633



Ref. No.	Part No.	Part Description
1.	710-0599	Hex Washer Screw 1/4-20 x.5
2.	731-1324	Belt Cover
3.	732-0339	Extension Spring
4.	710-0627	Hex Screw 5/16-24 x .75
5.	710-3005	Hex Cap Screw 3/8-16 x 1.25
6.	05896A	Drive Clutch Bracket
7.	748-0234	Shoulder Spacer
8.	756-0985	Pulley Half
9.	754-0343	V-Belt
10.	756-0984	Pulley Half
11.	736-0270	Bell Washer
12.	710-0230	Hex Cap Screw 1/4-28 x .50
13.	756-0313	Flat Idler
14.	710-1245	Lock Cap Screw 5/16-24
15.	712-0181	Lock Jam Nut 3/8-16
16.	756-0569	Pulley Half
17.	736-0242	Bell Washer
18.	736-0505	Flat Washer
19.	736-0507	Washer
20.	754-0430	Belt
21.	756-0967	Auger Pulley
22.	736-0247	Flat Washer
23.	736-0331	Bell Washer
24.	710-0696	Hex Cap Screw 3/8-24
25.	748-0360	Pulley
26.	710-0654A	Hex Washer Screw 3/8-16 x 1.0
27.	629-0071	Extension Cord
28.	OEM-390-987	Electric Start Kit (Includes Ref. 27)

IMPORTANT: For a proper working machine, use Factory Approved Parts.
V-BELTS are specially designed to engage and disengage safely. A substitute (non OEM) V-Belt can be dangerous by not disengaging completely

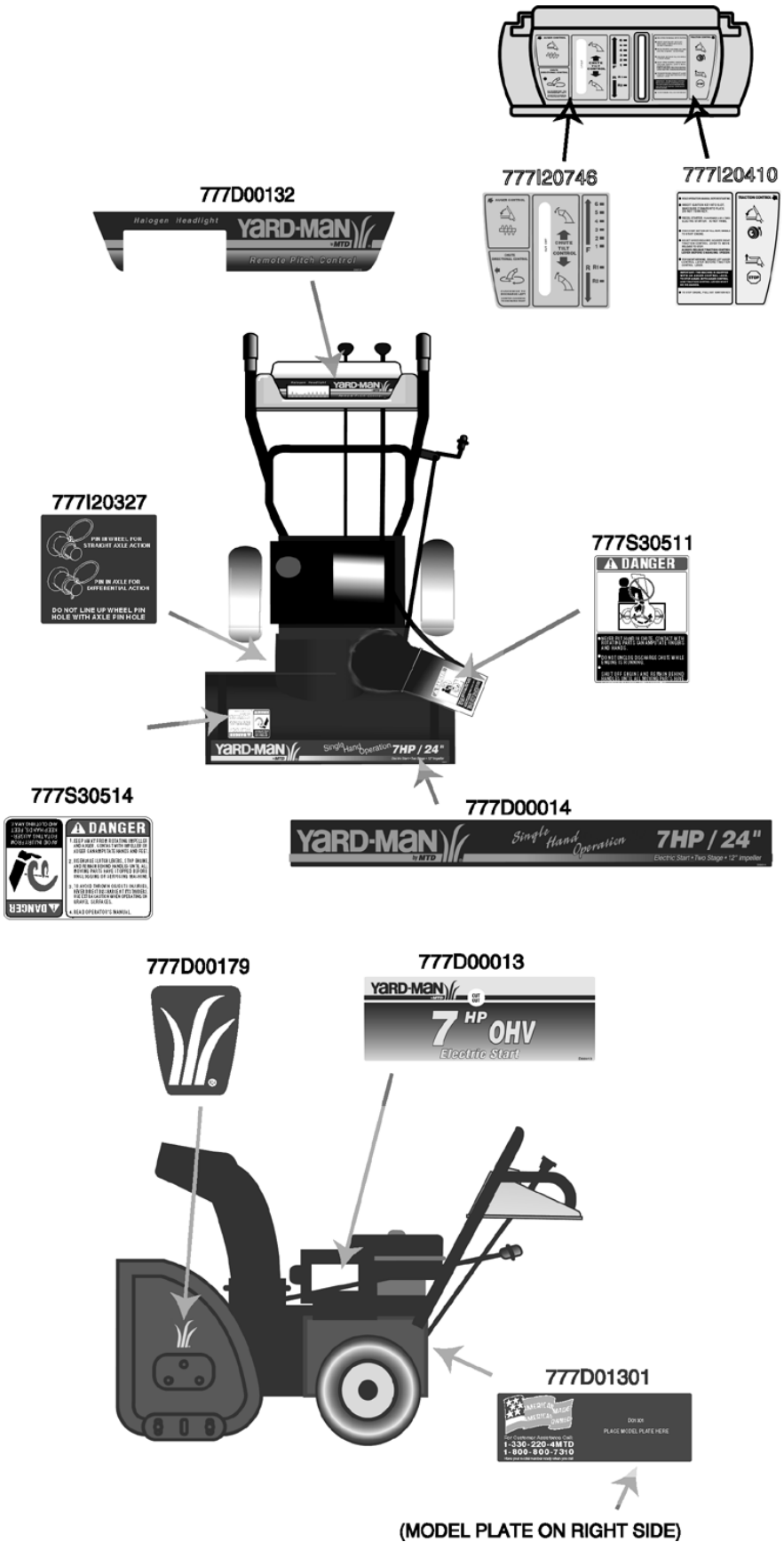
Model E663



Ref. No.	Part No.	Part Description
1.	710-0599	Hex Washer Screw 1/4-20 x .50
2.	731-1324	Belt Cover
3.	732-0710	Extension Spring
4.	710-0627	Hex Screw 5/16-24 x .75
5.	710-3005	Hex Cap Screw 3/8-16 x 1.25
6.	05896A	Drive Clutch Idler Bracket
7.	748-0234	Shoulder Spacer
8.	756-0987	Pulley Half
9.	754-0346	V-Belt
10.	756-0986	Pulley Half
11.	736-0270	Bell Washer
12.	710-0230	Hex Cap Screw 1/4-28 x .50
13.	756-0313	Flat Idler
14.	710-1245	Lock Hex Cap Screw 5/16-24
15.	712-0181	Lock Jam Nut 3/8-16
16.	756-0569	Pulley Half
17.	736-0242	Bell Washer
18.	736-0505	Flat Washer
19.	754-0430	Belt
20.	756-0967	Auger Pulley
21.	736-0247	Flat Washer 3/8 x 1.25 OD
22.	736-0331	Bell Washer
23.	710-0696	Hex Cap Screw 3/8-24
24.	748-0360	Adapter Pulley
25.	710-0654A	Hex Screw 3/8-16 x 1.0
26.	629-0071	Extension Cord
27.	OEM-390-987	Electric Start Kit

IMPORTANT: For a proper working machine, use Factory Approved Parts.
V-BELTS are specially designed to engage and disengage safely. A substitute (non OEM) V-Belt can be dangerous by not disengaging completely

Model E633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777I20410
777D00132
Halogen Headlight
YARD-MAN
Remote Pitch Control
777I20327
DO NOT LINE UP WHEEL PIN HOLE WITH AXLE PIN HOLE
777S30511
DANGER
777S30514
DANGER
777D00014
YARD-MAN
Single Hand Operation
7HP / 24"
777D00179
777D00013
YARD-MAN
7 HP OHV
Electric Start
777D01301
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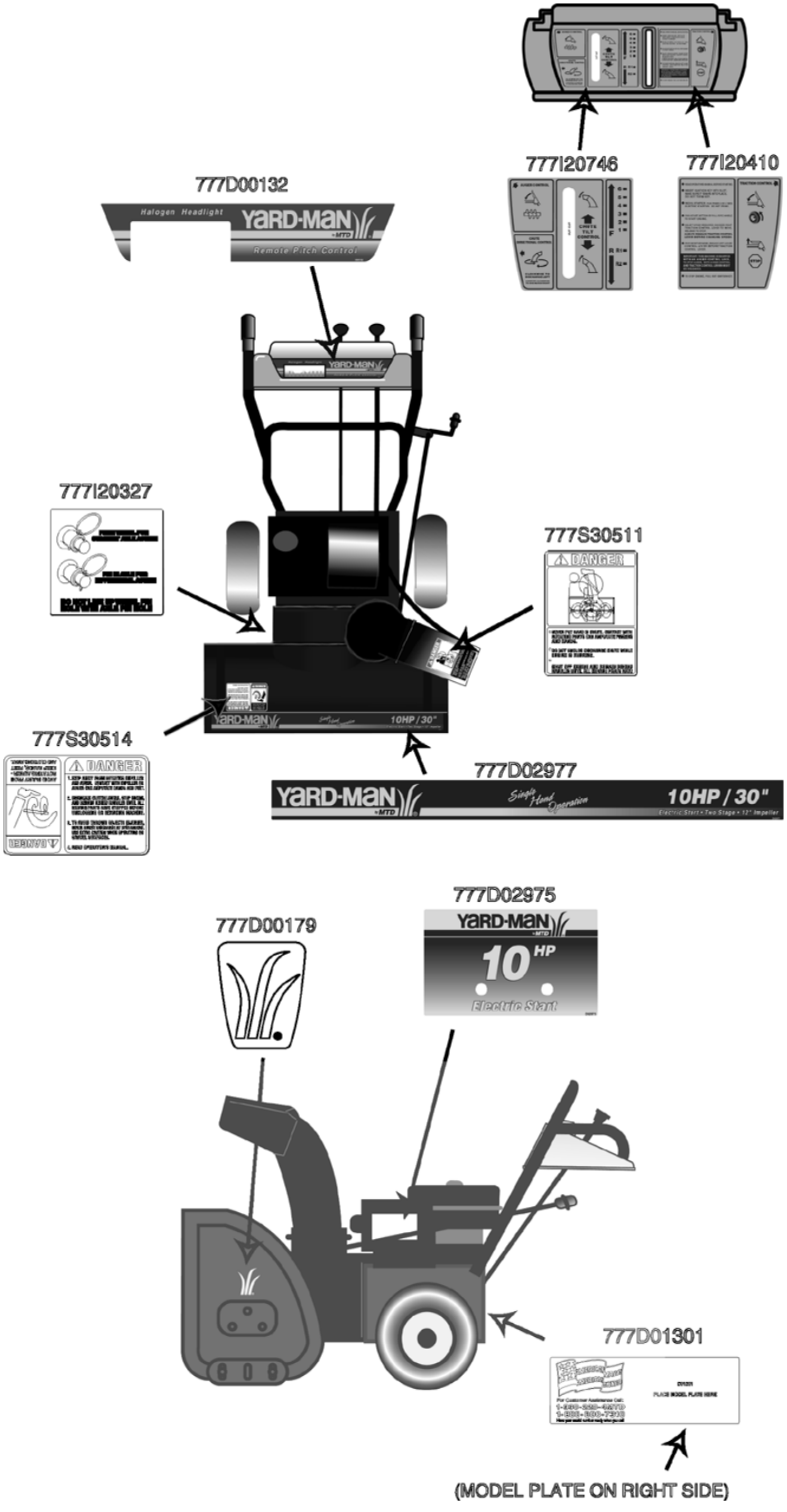
1-800-800-7310
(MODEL PLATE ON RIGHT SIDE)

Model E663


777I20746
777I20410
777D00132
Halogen Headlight
YARD-MAN
Remote Pitch Control
777I20327
777S30511
DANGER
777S30514
DANGER
777D02977
YARD-MAN
Single Hand Operation
10HP / 30"
777D02975
YARD-MAN
10 HP
Electric Start
777D00179
777D01301
(MODEL PLATE ON RIGHT SIDE)

MANUFACTURER'S LIMITED WARRANTY FOR:

YARD-MAN™ by MTD®

The limited warranty set forth below is given by MTD PRODUCTS INC ("MTD") with respect to new merchandise purchased and used in the United States, its possessions and territories.

MTD warrants this product against defects in material and workmanship for a period of two (2) years commencing on the date of original purchase and will, at its option, repair or replace, free of charge, any part found to be defective in material or workmanship. This limited warranty shall only apply if this product has been operated and maintained in accordance with the Operator's Manual furnished with the product, and has not been subject to misuse, abuse, commercial use, neglect, accident, improper maintenance, alteration, vandalism, theft, fire, water or damage because of other peril or natural disaster. Damage resulting from the installation or use of any accessory or attachment not approved by MTD Products Inc. for use with the product(s) covered by this manual will void your warranty as to any resulting damages.

Normal wear parts or components thereof are subject to separate terms as follows: All normal wear part or component failures will be covered on the product for a period of 90 days regardless of cause. After 90 days, but within the two year period, normal wear part failures will be covered ONLY IF caused by defects in material or workmanship of OTHER component parts. Normal wear parts and components include, but are not limited to, belts, blades, blade adapters, grass bags, rider deck wheels, seats, snow thrower skid shoes, shave plates and tires. Batteries are covered by a 90-day limited replacement warranty.

HOW TO OBTAIN SERVICE: Warranty service is available, WITH PROOF OF PURCHASE THROUGH YOUR LOCAL AUTHORIZED SERVICE DEALER. To locate the dealer in your area, please check for a listing in the Yellow Pages or contact the Customer Service Department of MTD PRODUCTS INC by calling 1-800-800-7310 or writing to P.O. Box 368022, Cleveland, Ohio 44136-9722. No product returned directly to the factory will be accepted unless prior written permission has been extended by the Customer Service Department of MTD PRODUCTS INC.

This limited warranty does not provide coverage in the following cases:

a. The engine or component parts thereof. These items carry a separate manufacturer's warranty. Please refer to the applicable manufacturer's warranty on these items.
b. Routine maintenance items such as lubricants, filters, blade sharpening and tune-ups, or adjustments such as brake adjustments, clutch adjustments or deck adjustments; and normal deterioration of the exterior finish due to use or exposure.
c. Log splitter pumps, valves and cylinders have a separate one year warranty.
d. MTD does not extend any warranty for products sold or exported outside of the United States of America, its possessions and territories, except those sold through MTD's authorized channels of export distribution.

No implied warranty, including any implied warranty of merchantability or fitness for a particular purpose, applies after the applicable period of express written warranty above as to the parts as identified. No other express warranty or guaranty, whether written or oral, except as mentioned above, given by any person or entity, including a dealer or retailer, with respect to any product shall bind MTD. During the period of the Warranty, the exclusive remedy is repair or replacement of the product as set forth above. (Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.)

The provisions as set forth in this Warranty provide the sole and exclusive remedy arising from the sales. MTD shall not be liable for incidental or consequential loss or damages including, without limitation, expenses incurred for substitute or replacement lawn care services, for transportation or for related expenses, or for rental expenses to temporarily replace a warranted product. (Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion or limitation may not apply to you.)

In no event shall recovery of any kind be greater than the amount of the purchase price of the product sold. Alteration of the safety features of the product shall void this Warranty. You assume the risk and liability for loss, damage, or injury to you and your property and/or to others and their property arising out of the use or misuse or inability to use the product.

This limited warranty shall not extend to anyone other than the original purchaser, original lessee or the person for whom it was purchased as a gift.

How State Law Relates to this Warranty: This limited warranty gives you specific legal rights, and you may also have other rights which vary from state to state.